

IT IS CLAIMED:

1. A method for administering a radiosensitizer to a tumor, comprising

5 preparing liposomes comprised of (i) a vesicle-forming lipid; (ii) between 1-20 mole percent of a vesicle-forming lipid derivatized with a hydrophilic polymer chain, and (iii) between 1-15 mole percent of a radiosensitizer derivatized with a lipid moiety linked to the radiosensitizer; and

10 administering the liposomes to a tumor-bearing patient.

2. The method of claim 1, wherein the radiosensitizer is 5-iodo-2'-deoxyuridine or 5-bromo-2'-deoxyuridine.

15 3. The method of claim 2, wherein the lipid moiety is a fatty acid.

20 4. The method of claim 2, wherein the lipid moiety is a saturated fatty acid.

25 5. The method of claim 4, wherein the lipid moiety is selected from the group consisting of lauric acid, myristic acid, palmitic acid, stearic acid, arachidic acid, behenic acid and lignoceric acid.

30 6. The method of claim 1, wherein the radiosensitizer is 5-iodo-2'-deoxyuridine and the lipid moiety is palmitic acid.

35 7. The method of claim 1, wherein the radiosensitizer is derivatized with a second lipid moiety.

8. The method of claim 7, wherein the radiosensitizer is 5-iodo-2'-deoxyuridine and the lipid moieties are palmitic acid.

35 9. The method of claim 1, wherein the hydrophilic polymer chain is polyethyleneglycol.

10. A method for preparing a liposome composition including a radiosensitizer, comprising
5 mixing in a lipid solvent (i) a vesicle-forming lipid; (ii) between 1-20 mole percent of a vesicle-forming lipid derivatized with a hydrophilic polymer chain, and (iii) between 1-15 mole percent of a radiosensitizer derivatized with a lipid moiety linked to the radiosensitizer; and
10 adding an amount of a second solvent selected (i) to achieve a lipid solvent amount greater than 10 weight percent and less than about 50 weight percent and (ii) to obtain a liposome size less than that obtained at another lipid solvent amount, said lipid solvent and said second solvent being miscible at the amount of second solvent.

15 11. The method of claim 10, wherein the lipid solvent is an alcohol.

20 12. The method of claim 11, wherein the lipid solvent is methanol, ethanol or butanol.

25 13. The method of claim 10, wherein the second solvent is water.

14. The method of claim 10, wherein the radiosensitizer
25 is 5-iodo-2'-deoxyuridine or 5-bromo-2'-deoxyuridine.

30 15. The method of claim 14, wherein the lipid moiety is a fatty acid.

30 16. The method of claim 14, wherein the lipid moiety is a saturated fatty acid.

35 17. The method of claim 16, wherein the lipid moiety is selected from lauric acid, myristic acid, palmitic acid, stearic acid, arachidic acid, behenic acid and lignoceric acid.

18. The method of claim 10 wherein the radiosensitizer is 5-iodo-2'-deoxyuridine and the lipid moiety is palmitic

acid.

19. The method of claim 10, wherein the radiosensitizer is derivatized with a second lipid moiety.

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20. The method of claim 19, wherein the radiosensitizer is 5-iodo-2'-deoxyuridine and the lipid moieties are palmitic acid.

10 21. The method of claim 10, wherein the hydrophilic polymer chain is polyethyleneglycol.

22. A liposome composition for administration of a radiosensitizer, comprising

15 liposomes comprised of (i) a vesicle-forming lipid; (ii) between 1-20 mole percent of a vesicle-forming lipid derivatized with a hydrophilic polymer chain, and (iii) between 1-15 mole percent of a radiosensitizer derivatized with a lipid moiety linked to the radiosensitizer; said liposomes obtainable by (a) mixing components (i), (ii) and (iii) in a lipid solvent, and (b) adding a selected amount of a second solvent, said selected amount effective (i) to achieve a lipid solvent amount greater than 10 weight percent and less than about 50 weight percent and (ii) to obtain a 20 liposome size smaller than that obtained a lipid solvent amount other than said selected amount, said lipid solvent and said second solvent being miscible at the selected amount 25 of second solvent.

30 23. The composition of claim 22, wherein the radiosensitizer is 5-iodo-2'deoxyuridine or 5-bromo-2'deoxyuridine.

35 24. The composition of claim 23, wherein the lipid moiety is a fatty acid.

25. The composition of claim 23, wherein the lipid moiety is a saturated fatty acid.

26. The composition of claim 25, wherein the lipid moiety is selected from lauric acid, myristic acid, palmitic acid, stearic acid, arachidic acid, behenic acid and lignoceric acid.

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27. The composition of claim 22, wherein the radiosensitizer is 5-iodo-2'-deoxyuridine and the lipid moiety is palmitic acid.

10 28. The composition of claim 22, wherein the
radiosensitizer is derivatized with a second lipid moiety.

29. The composition of claim 28, wherein the radiosensitizer is 5-iodo-2'-deoxyuridine and the lipid moieties are palmitic acid.

30. The composition of claim 22, wherein the hydrophilic polymer chain is polyethyleneglycol.